

Utah Department of Transportation Traffic Management Division

January 2014
Monthly Report



2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 www.udottraffic.utah.gov



Mission of the Traffic Management Division

- To Support UDOT and the Department of Public Safety to Achieve Zero Fatalities.
- To Help Provide Reliable and Efficient Travel Throughout Utah.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

Field Devices Summary

Freeway PTZ Cameras	345	Freeway VMS	91
Arterial PTZ Cameras	391	Surface Street VMS	55
RWIS & Contracted Weather Cameras	171	Portable TOC VMS	7
Viewable Detection Cameras	87	Legacy Trucks Prohibited VMS	21
Total Cameras	994	Variable Speed Limit VMS	15
HAR (29 permanent/5 portable)	34	Total VMS	189
RWIS	84	TMS	537
Ramp Meters	65	Traffic Signals	1527

Operations Summary

VMS Messages Displayed	40,441	IMT Assists	1650
Signal Timing Work Orders	21	Website Visitor Sessions	128,318
Signal Maintenance Work Orders	146	511 Calls	27,244
All New Work Orders	316	Weather Desk Calls	771
Incident Responses by the TOC	742	Ask CommuterLink Questions	65
Incident Duration Average Minutes	60	UDOT Traffic Followers and Re-tweets	210,777

January, 2014

TRAVELER INFORMATION helped with a TOC tour for the Lieutenant Governor; increased Citizen Reporter volunteers to 470; attended UDOT Click N' Fix training; made a presentation about the Traffic Mobility Division to the Utah Highway Patrol; and represented UDOT in the Crowdsourcing Information for Transportation Agencies study/webinar.

TRAFFIC SIGNAL OPERATIONS re-timed all traffic signals in St George City (including city owned corridors); added several UDOT and Salt Lake City intersections to the Automated Signal Performance Measure website; Added communication to the TOC for signals in Pleasant Grove, Cedar Hills and Payson; developed new signal timing plans along 8400 West, 5600 West, Mountain View Corridor, 700 East, downtown Ogden, SR-193 and in Park City; and worked with Traffic & Safety to identify several intersections that need to be rebuilt.

TRAFFIC OPERATIONS AND REPORTING provided traffic engineering support to several projects this past month. These projects include the Bangerter Highway Redwood Road Design Build; I-15 POINT Design Build; Bluff Street/St. George Boulevard; and the the MP 10 interchange in Washington City projects. Members of the team attended the NCHRP project meeting for DDI intersection spacing and operations, and the Transportation Research Board Annual Meeting in Washington, D.C.

The team is making great progress on the Web Based Congestion Reporting Program.

ITS ASSET MANAGEMENT distributed final After Action Reports for the December 3 winter storm and November 21 wind event. They also started closing outdated work orders from the AIMS Work Order module.

The team integrated three traffic monitoring stations, four variable message signs, and six signals.

ATMS MAINTENANCE –

WEATHER INFORMATION had 653 UDOT weather interactions, 232 outgoing Weather Alerts, 156 National Weather Service collaborations, and 42 Road Weather Alerts for the traveling public.

January 2014 climate conditions varied throughout the state. There were 5 storms impacting 13 days. Each storm lasted an average of 2.6 days. Salt Lake City was near normal for precipitation and temperature but had an unusually high number of days of inversion conditions. The southwest corner of the state had above normal temperatures and below normal precipitation. Eastern Utah had below normal temperatures and below normal precipitation.

The UDOT weather website was upgraded. New features include a toggle for RWIS variables, a looping radar image, and complete access to UDOT camera snapshots to name a few. An experimental Road Weather Index can now be viewed on the UDOT weather website. This index will provide a tool for real time and post analysis of road weather events. This index is calculated using RWIS variables such as road condition, road temperature, snowfall rate, precipitation occurrence, visibility, wet-bulb temperature, and wind. The result is one value that indicates the severity of mitigable road weather conditions at an RWIS site.

A new low light color camera was installed at Scipio Summit (I-15) and Devil's Slide (I-84). Both of these locations have enough ambient street lighting to provide a clear view of road weather conditions at night. Still snapshot images will soon be available on UDOT Traffic website.

ATMS MAINTENANCE –

Field Team completed two Local Field Operations Tests for VMS and CCTV in Region 4, with the resulting punch lists prepared for the ITS Project Managers. The team solved a long running communications problem that had been installed as part of a system coordination project. Several problems were corrected, including misaligned antennas. They also constructed a solar powered site on I-15.

Lab Team tested and repaired 22 ATMS devices; assembled and tested two traffic signal cabinets; tested out a new texting based system to replace the existing Chain Up Signs paging system which is failing; repaired a Flex Lane sign; and repaired the Variable Speed Limit sign at Mile Post 136.9. They also inspected the new RWIS/TMS site in Wanship; and replaced a TMS cabinet and installed new detection loops on I-80 at Mile Post 136.9. The Lab tested and configured 12 Digi port servers for the Traffic Signal Group to be used in vehicle detection upgrades.

Express Lanes Team programmed and installed eight lane controllers at various sites; reset two VTMS; completed a laser reset; reset an RFID tag reader; and cleaned laser lenses and reflectors. The Express Lane team also assisted the Fiber Team replacing damaged junction boxes and tracing fiber paths in Communication Hubs.

Fiber Team has been obtaining permits from UTA to replace fiber between I-15 and West Temple on 3300 South; providing communication to a new radio located at 9400 South 2000 East, coordinating a dig up repair at 240 South 200 West; and repairing fiber at a cabinet knock down at 1900 West 3500 South, all in Salt Lake Valley. The team also has been coordinating and testing a dig up and two new cameras in Parleys Canyon, and providing support for projects in Logan, Lehi, St. George, Salt Lake, and Riverdale.

Region 1- Matt Smith

Ogden Area Signal Interconnect:

Concept, locations and design are being re-examined.

SR 193 Extension:

This project is under construction.

I-15; SR126 to US-91:

This project is complete and final issues with four devices will be mitigated with another project.

I-15; SR-30 to the Idaho State line:

This project is being designed by PineTop Engineering and is ready to advertise. This project needs major funding for ATMS.

Layton Interchange:

This project is in design.

Brigham DDI Interchange:

This project is in design.

Weber Canyon De-Icing sign communication:

Project is under construction.

ITS Deployment Highlights

Region 1 – Matt Smith cont.

US-89; SR-193 to Cornia Drive:

This project is in design.

US-89; Antelope Drive Extension:

This project is in design.

Hill Field and Main in Layton:

This project is in design.

Region 2 - Chris Siavrakas

I-80 Variable Speed Limit - Early this month the Variable Speed Limit completed the last steps with testing and integration. The web based decision support software was also completed integrated live testing with the VSL's. Once all the operational checks were complete and training conducted with the Traffic Engineers, we fully activated the system to run full time. We had a couple days before the first major storm hit requiring the signs to lower the speed limit. The effort to change the speed and manage the real time changes based on quickly changing conditions proved to be more manpower intensive than originally anticipated. Fortunately, the hardware changes were immediate.

The system as a whole works very well and has been well received by the public. We are still fine tuning the brightness and orientation of the signs for optimal display. The media has also been very interested in promoting this project and the benefits to the travelers in that corridor.

Traffic Signal Interconnect - Coordination with UTOPIA to integrate and connect traffic signals through their fiber system has cleared some major technological obstacles. Pinetop Engineers was contracted to coordinate with UTOPIA and our network and fiber staff to fine tune the communication protocols to successfully bridge from our fiber switch to their fiber switch to bring communications back to the TOC from those signals. There are 68 traffic signals being connected on a grant program and funded from CMAQ funds to buy equipment. The most signals have been connected in Layton City. We will continue with signals in Centerville, West Valley City, Murray and Midvale.

Region 3 - Brad Cameron

I-15 NB VMS in Lehi – On schedule to meet Feb 28 advertisement.

Saratoga Springs; SR-68 at Pony Express to 800 West – Evaluating proposed ATMS connection to new 200 West signal and future 800 West signal. Region 3 is requesting ATMS State funds to participate. Analyzing engineers estimate to see if necessary.

I-15; Spanish Fork to Payson – Began 30 day burn-in of devices.

Spanish Fork Dispatch upgrade – Negotiating a WTO to complete equipment installation inside the Public Works Building and Police Headquarters.

SR-92 CCTV/VMS (Hybrid) – Established PIN 12641 for new project.

Region 4 – Matt Smith

St. George:

Together we will prepare a scope to connect Hurricane City to the network.

VMS for I-70 and SR-6:

The concept has been completed and for the three locations; WBI-70 (East of Green River Exit), EB I-70 (Prior to Salina Interchange), SB US-6 (Near Helper and adjacent to Existing NB VMS). This project has been funded and will proceed to design. Project has been advertised and we are awaiting bids.

Fiber upgrade for US-6, Helper and Price Signal Integration:

We have hired a contractor off the fiber procurement contract for the fiber portion. We are waiting for signal connections from Emery Telecom.

Various Small VMS locations for ICY Bridge at I-70 and Fish Springs, and Halls Crossing at Lake Powell:

Concept and design is complete. Cache Valley Electric has been hired to work on this.

I-15; North Beaver to Manderfield:

This project is in design and is ready to be advertised.

I-15; Cedar City Two VMS:

Project is completed and being integrated.

Price, Helper fiber and Interconnect:

This project is under construction.

ITS Standards and Specifications

ITS Standards/Contracts

The contract modification for time extension and funding increase is in process.

Procurement:

A contract was advertised to install NIDs at specific sites in the metro area.

Work continued to develop a 2 Step Bid document for Phase II of the Brigham City VMS structure. Advertisement is planned for February.

The ATMS Install and Repair contract option is still under discussion.

Work continued on the equipment contract for the 5400 Flex lanes.

Work continues on the Camera Lowering System RFP. The question of how many the TOC will install in the next five years was raised. It appears that one or two installations yearly may take place for the next five years. This low usage brings about the question of how much stiffening should be done for pole deflection during windy days. Another solution may be to adjust the standard specification 13556 CCTV. We would not allow the use of 80 foot poles unless previously approved by the TOC Project Managers.



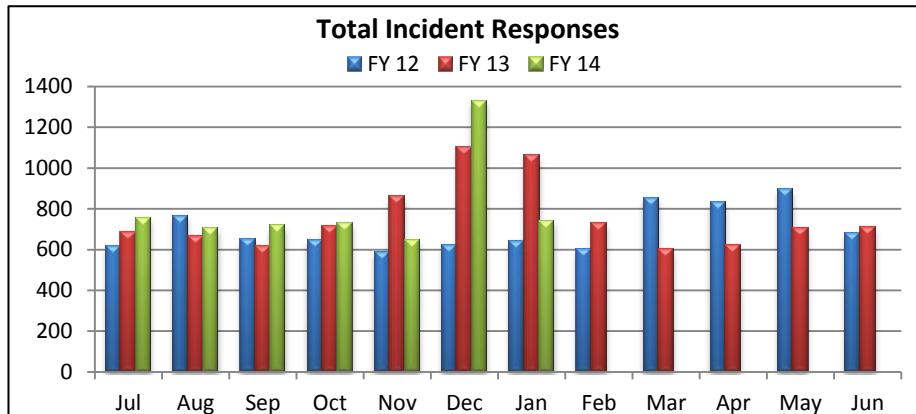
Department of Public Safety Webinar

Glenn Blackwelder, Mark Taylor, Chris Siavrakas, Jeff Williams, and Lisa Miller participated in a DPS webinar discussing TMD resources.

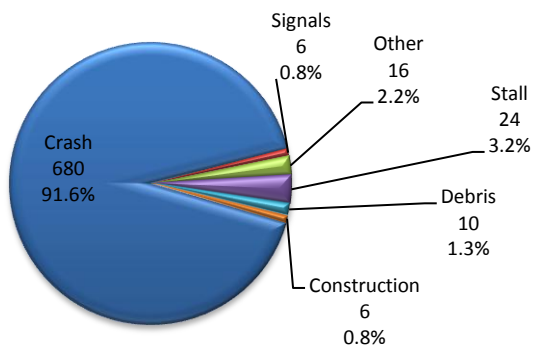
Acronyms

CCTV Closed Circuit Television	I2TMS Integrated Interagency Traffic Management System
RWIS Road-Weather Information System	TOC Traffic Operations Center
DPS Department of Public Safety	VMS Variable Message Sign
TMS Traffic Monitoring Station	ITS Intelligent Transportation System
HAR Highway Advisory Radio	TMD Traffic Management Division

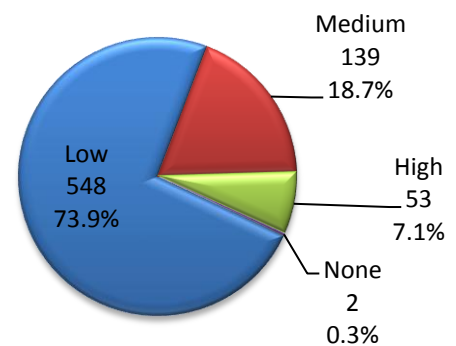
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.



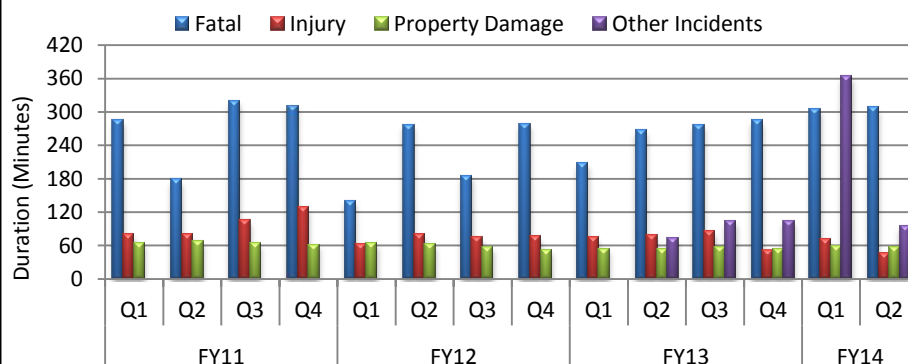
Incidents By Type for January 2014



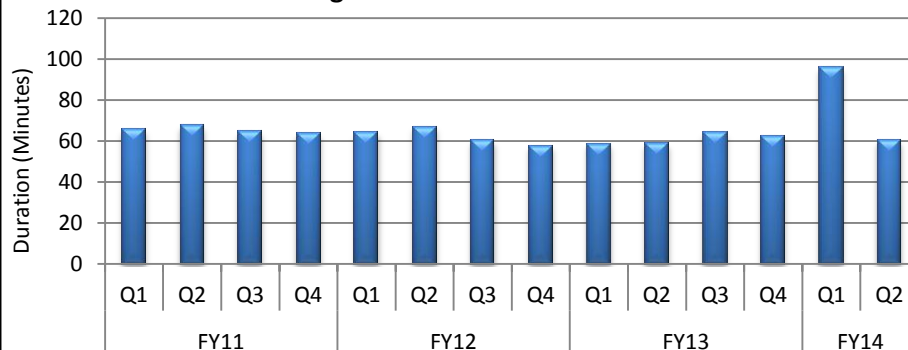
Incidents by Severity for January 2014



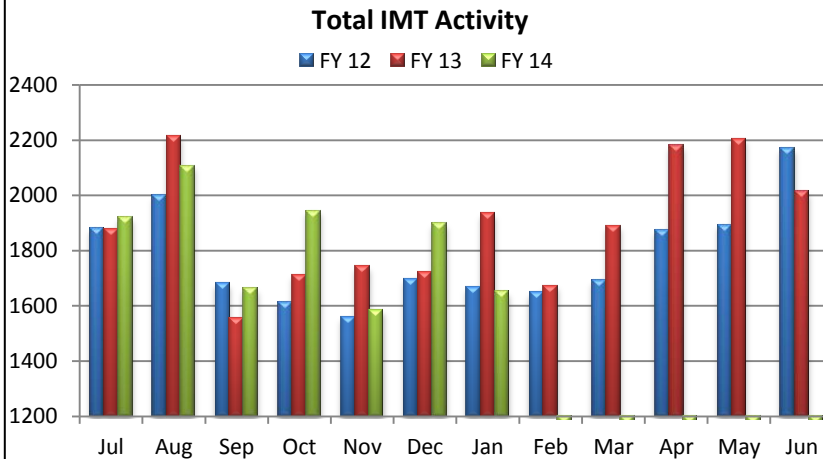
Average Crash Duration



Average Duration of All Incidents

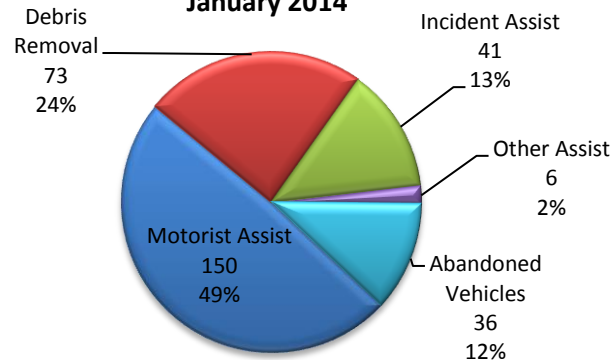


Incident Management Team (IMT) Activities



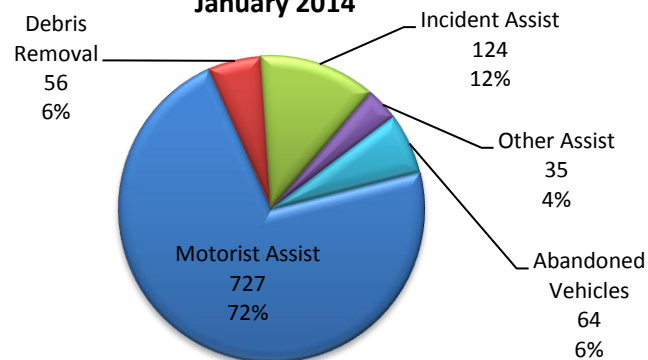
IMT Activities by Type for UDOT Region 1

January 2014



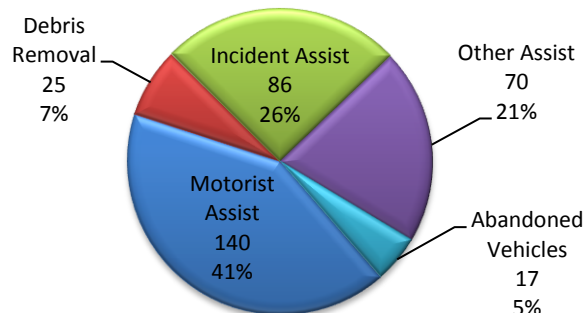
IMT Activities by Type for UDOT Region 2

January 2014



IMT Activities by Type for UDOT Region 3

January 2014



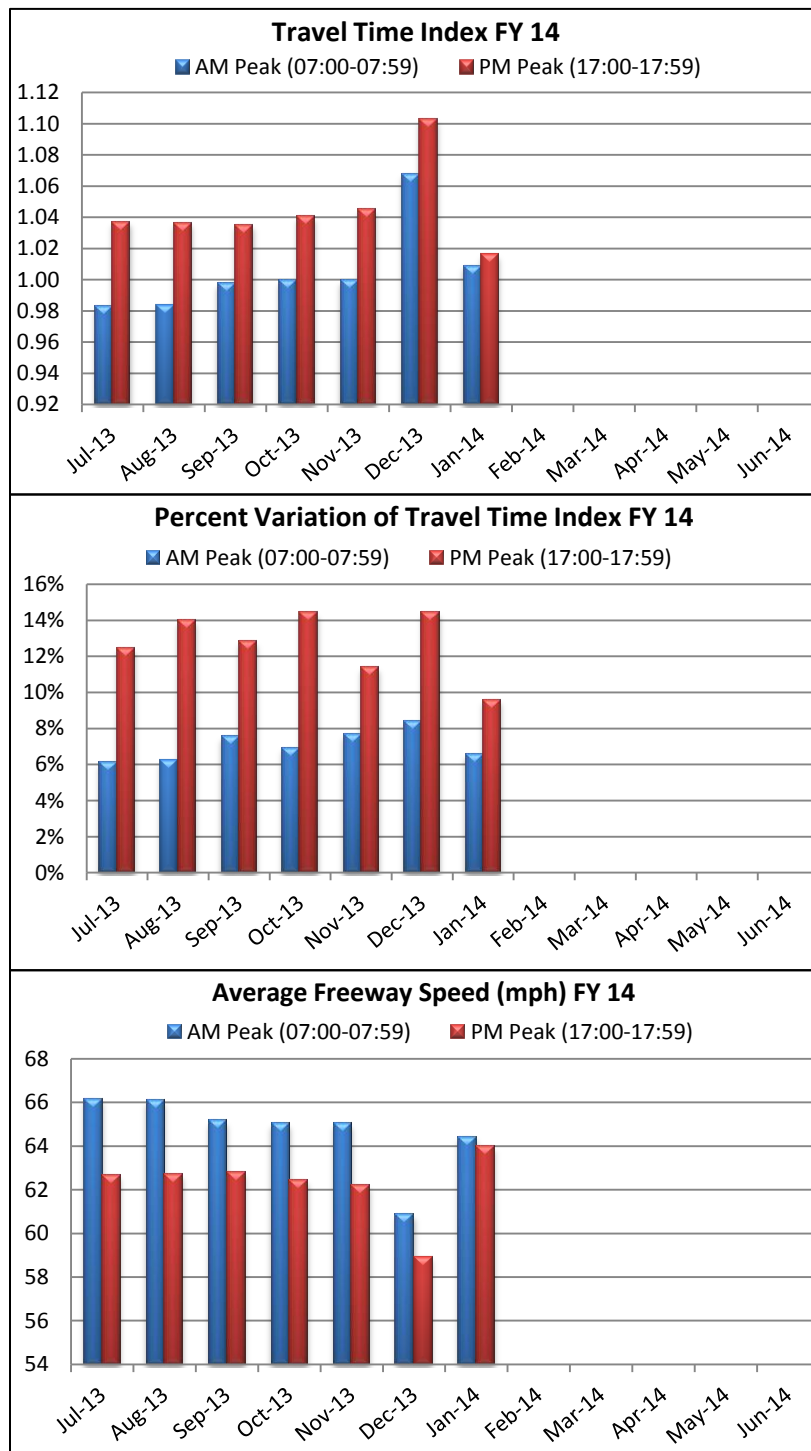
Freeway Traffic Level of Service

Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

Travel Time Index: This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

Percent Variation of Travel Time Index: The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

Average Freeway Speed: The freeway speed is weighted by volume.



Top 10 Peak Travel Time Index by Segment for January 2014

(+) Direction (NB, EB, Clockwise)

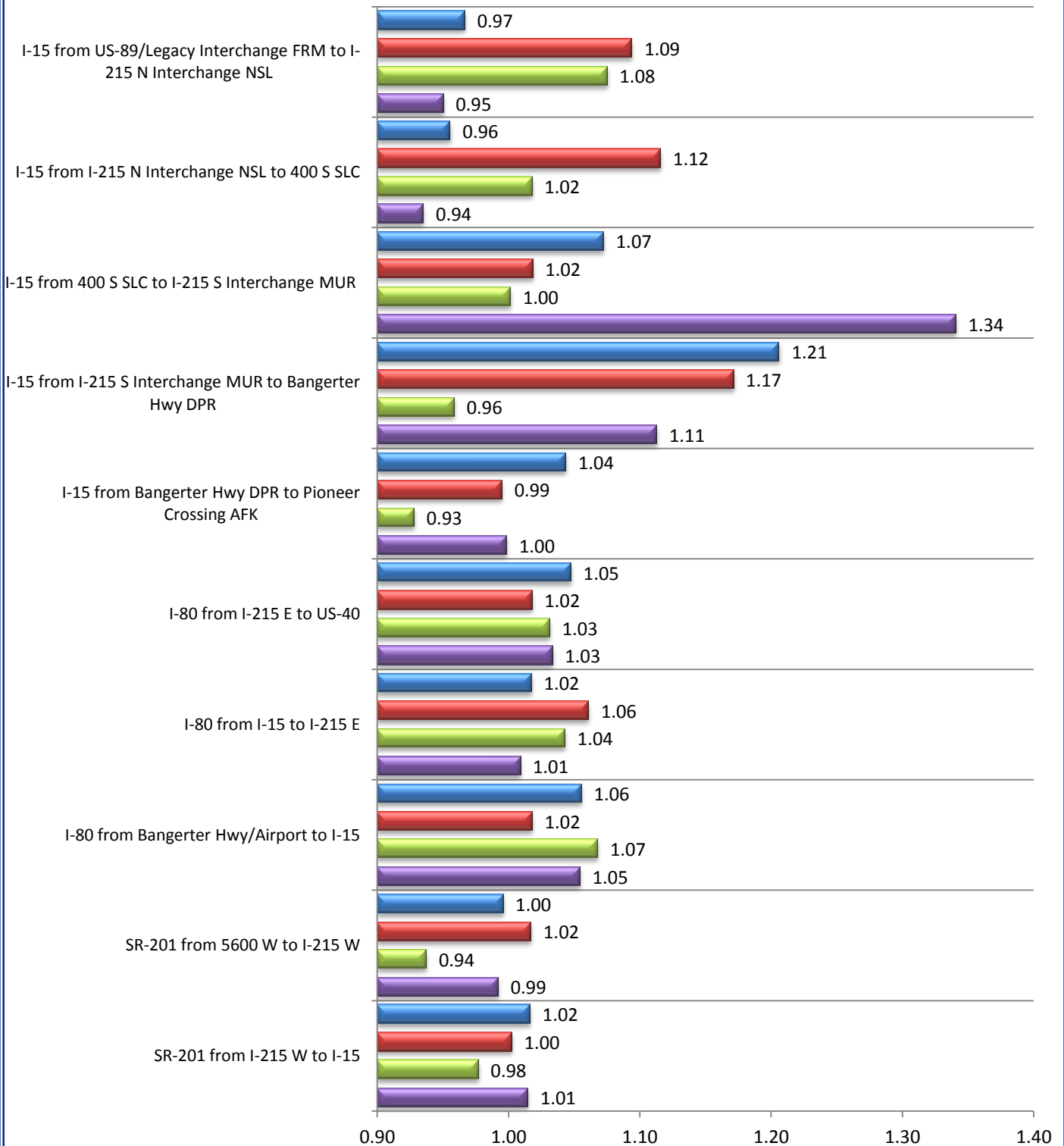
(-) Direction (SB, WB, Counter Clockwise)

■ AM Peak (07:00-07:59)

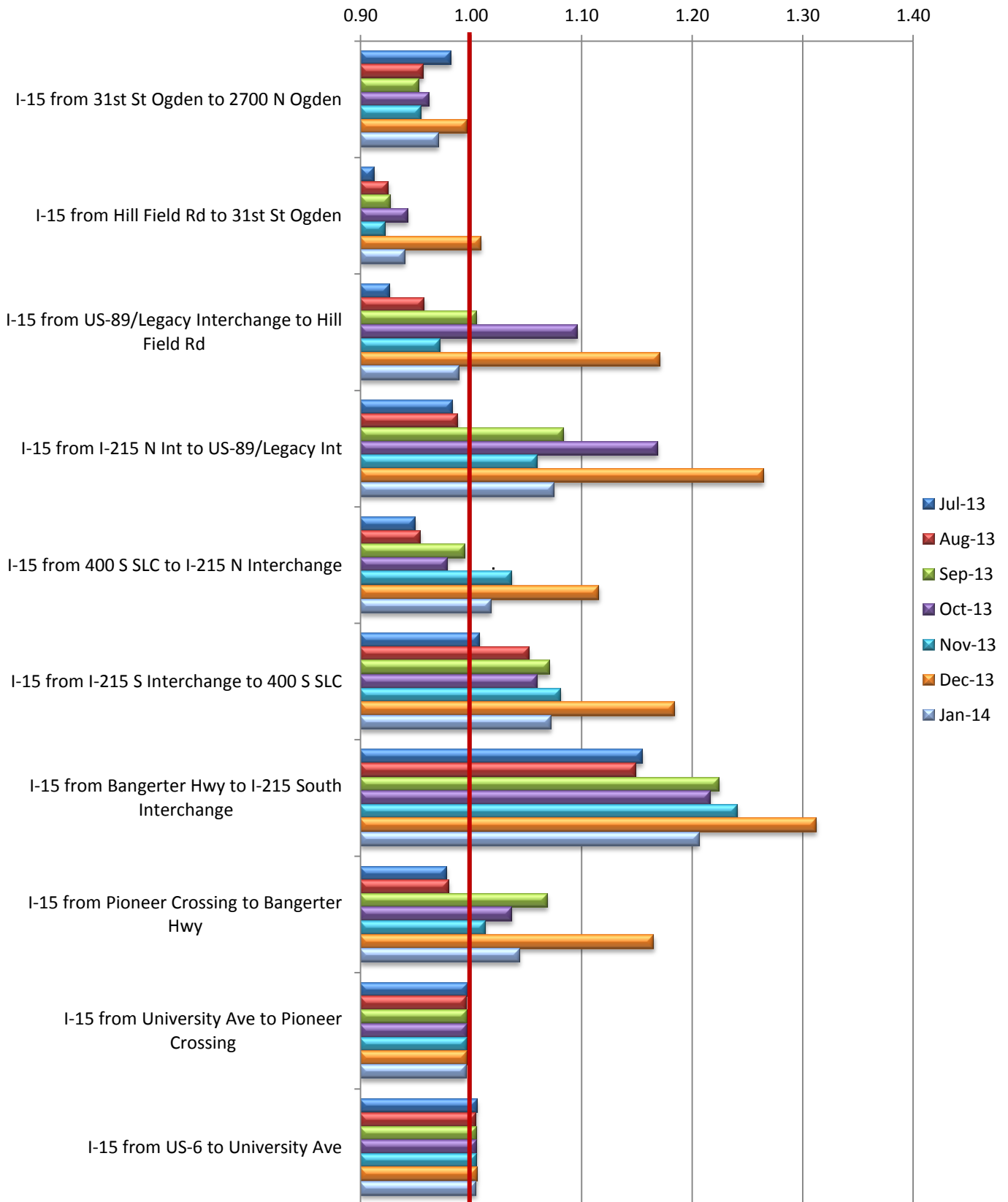
■ PM Peak (17:00-17:59)

■ AM Peak (07:00-07:59)

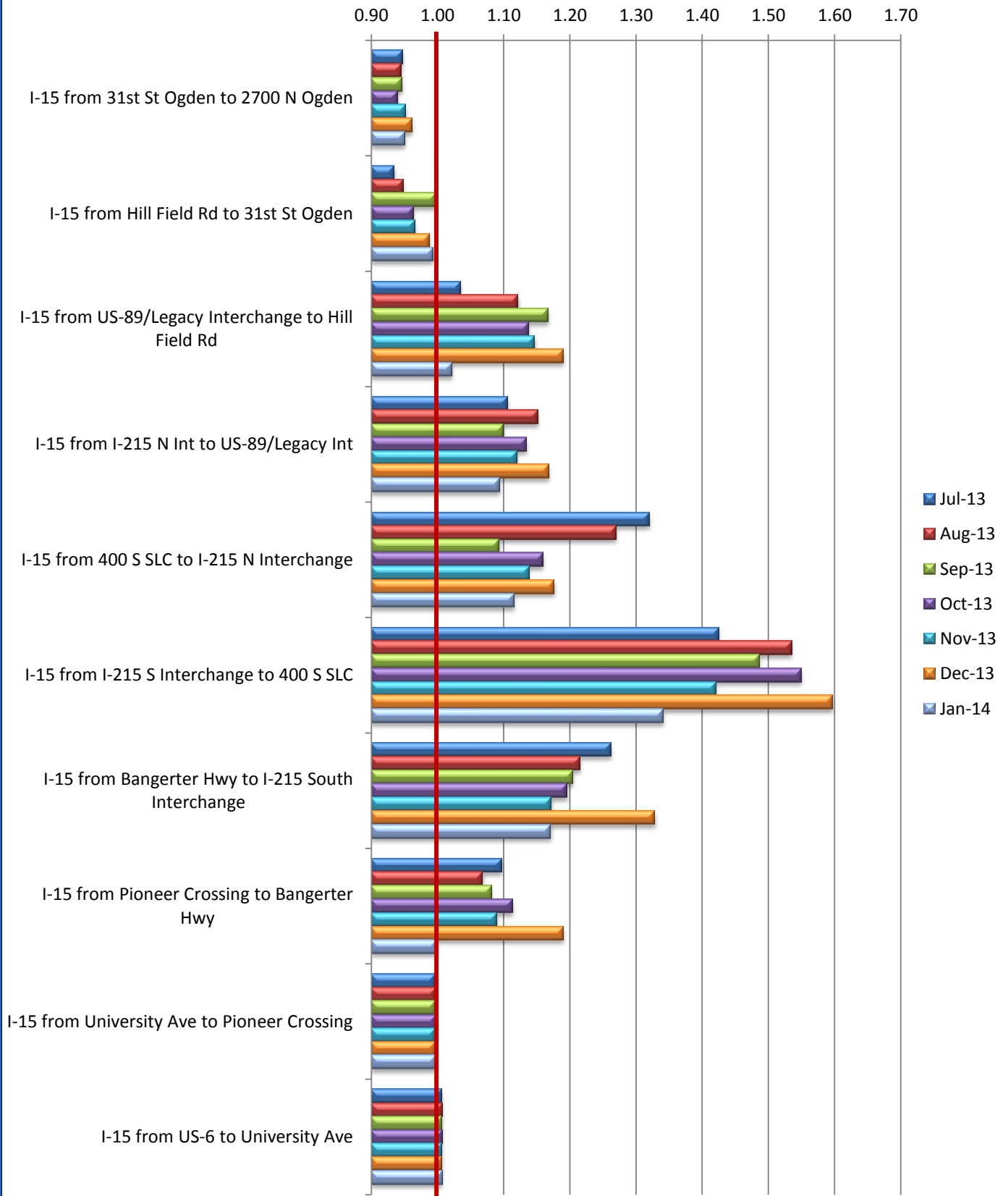
■ PM Peak (17:00-17:59)



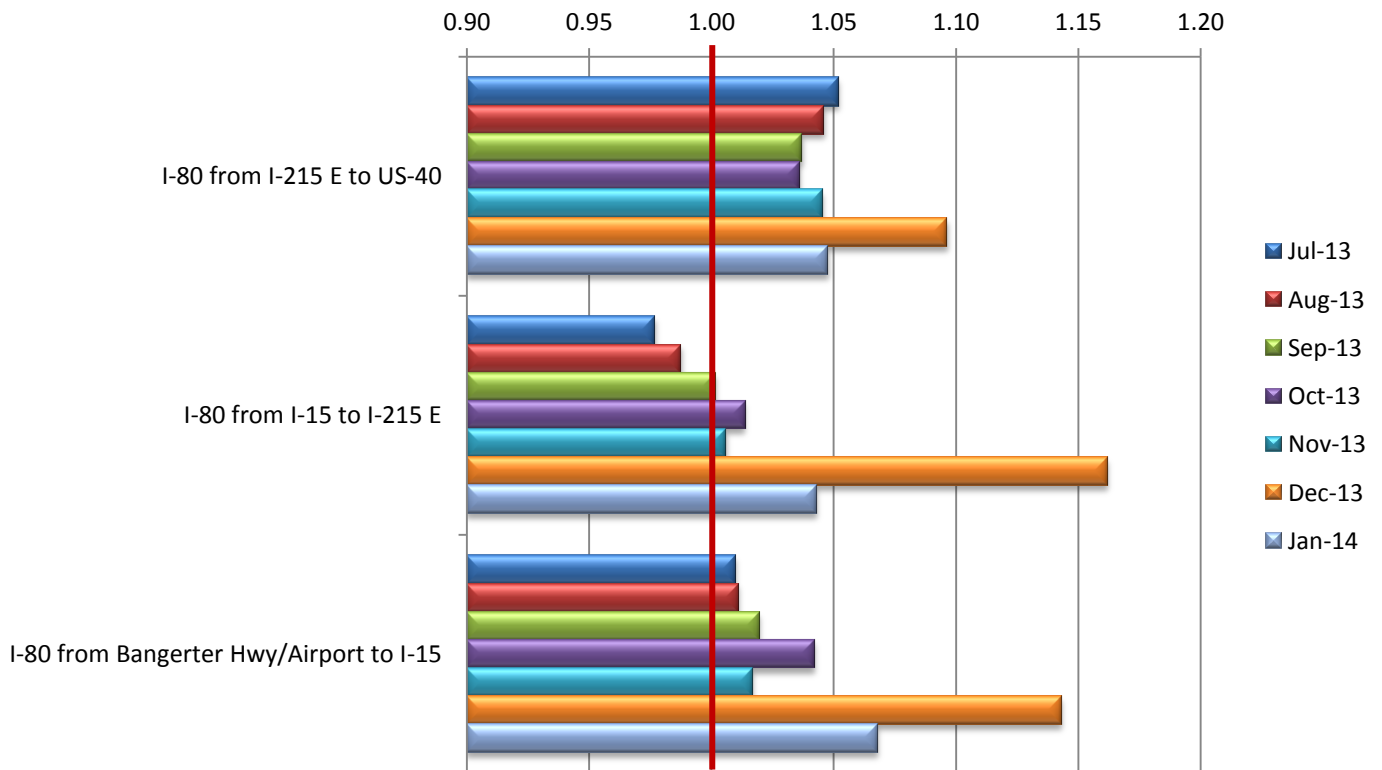
AM Peak Travel Time Index for I-15 FY 14



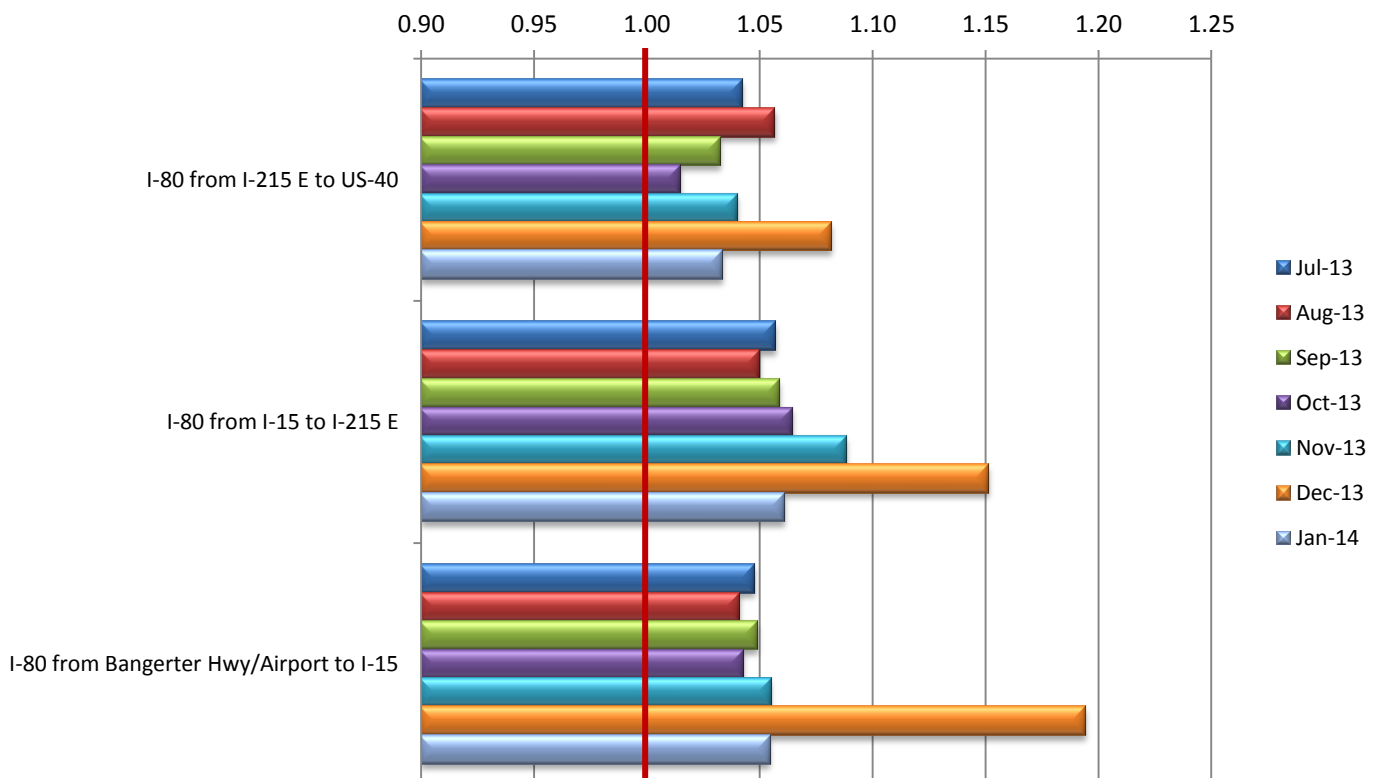
PM Peak Travel Time Index for I-15 FY 14



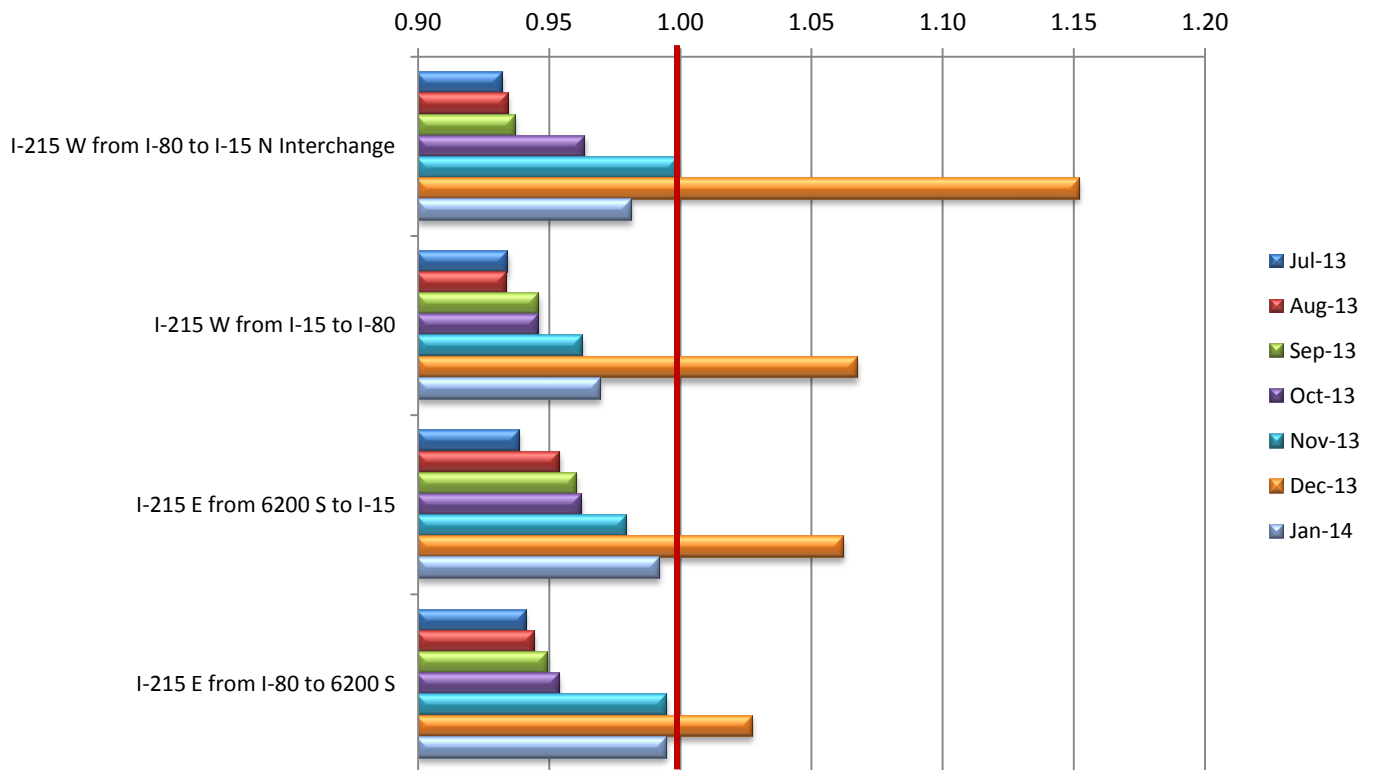
AM Peak Travel Time Index for I-80 FY 14



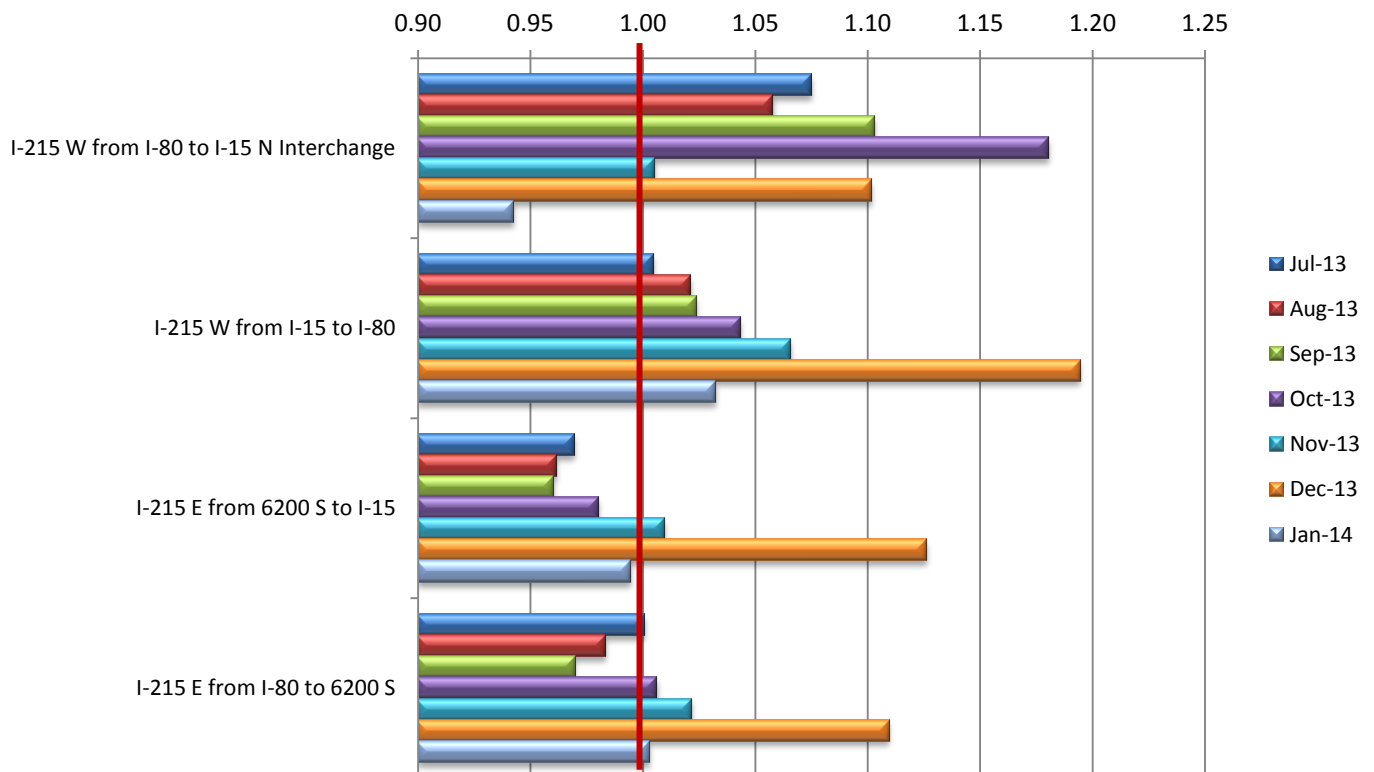
PM Peak Travel Time Index for I-80 FY 14



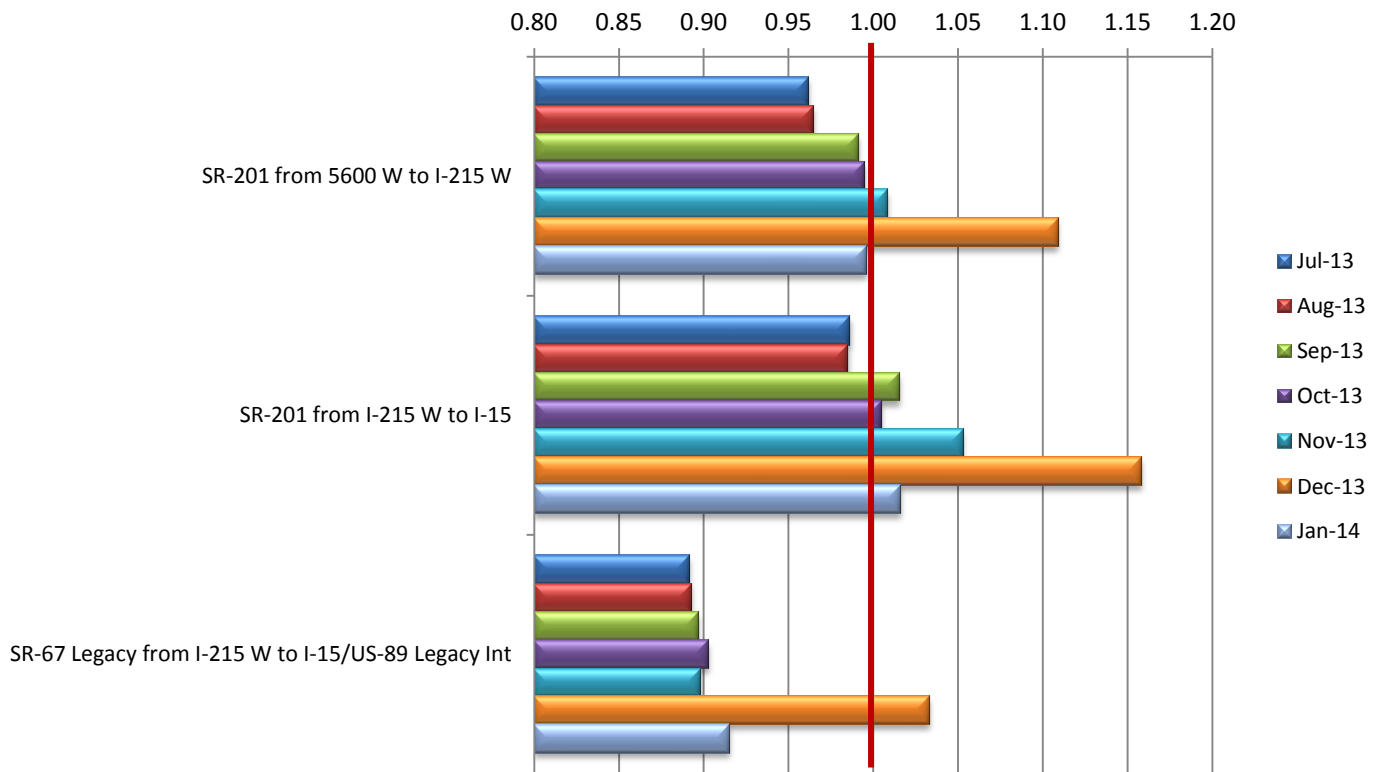
AM Peak Travel Time Index for I-215 FY 14



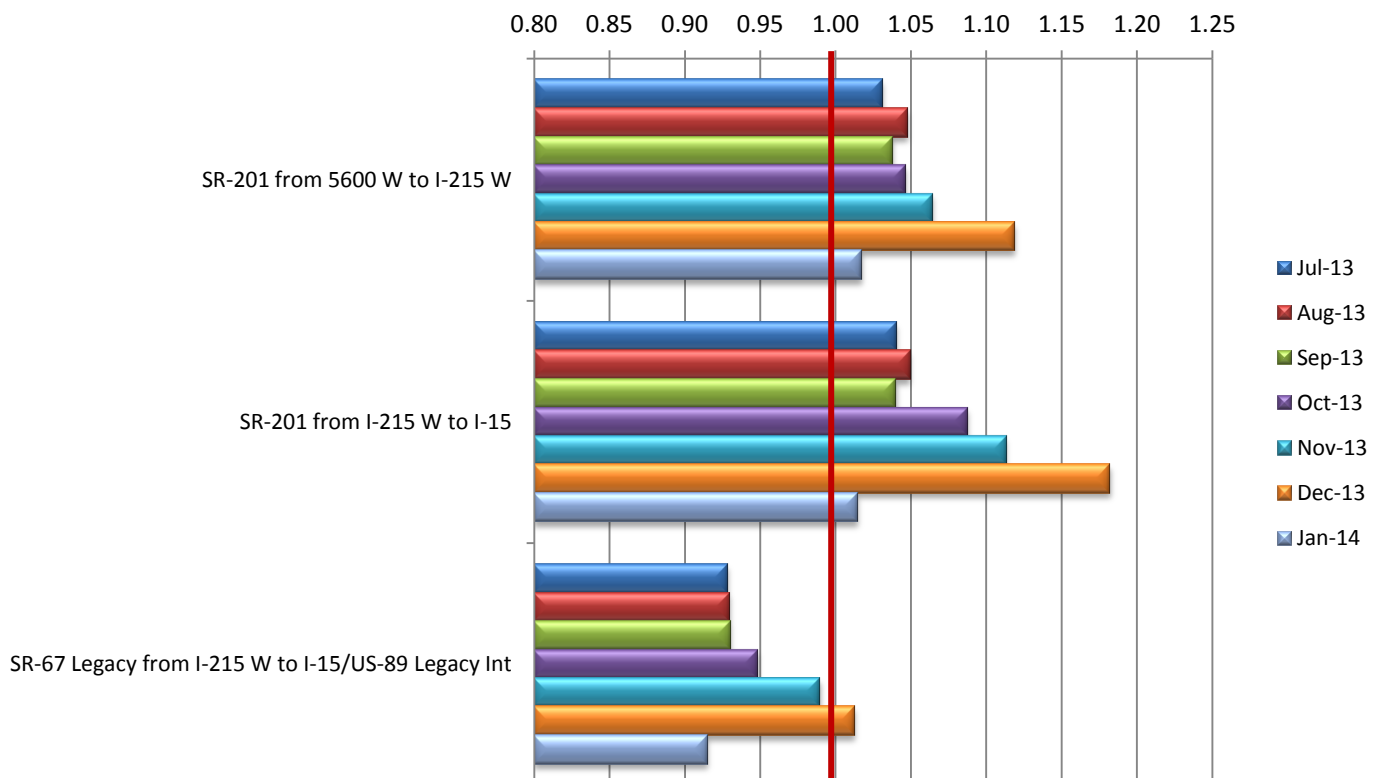
PM Peak Travel Time Index for I-215 FY 14



AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 14



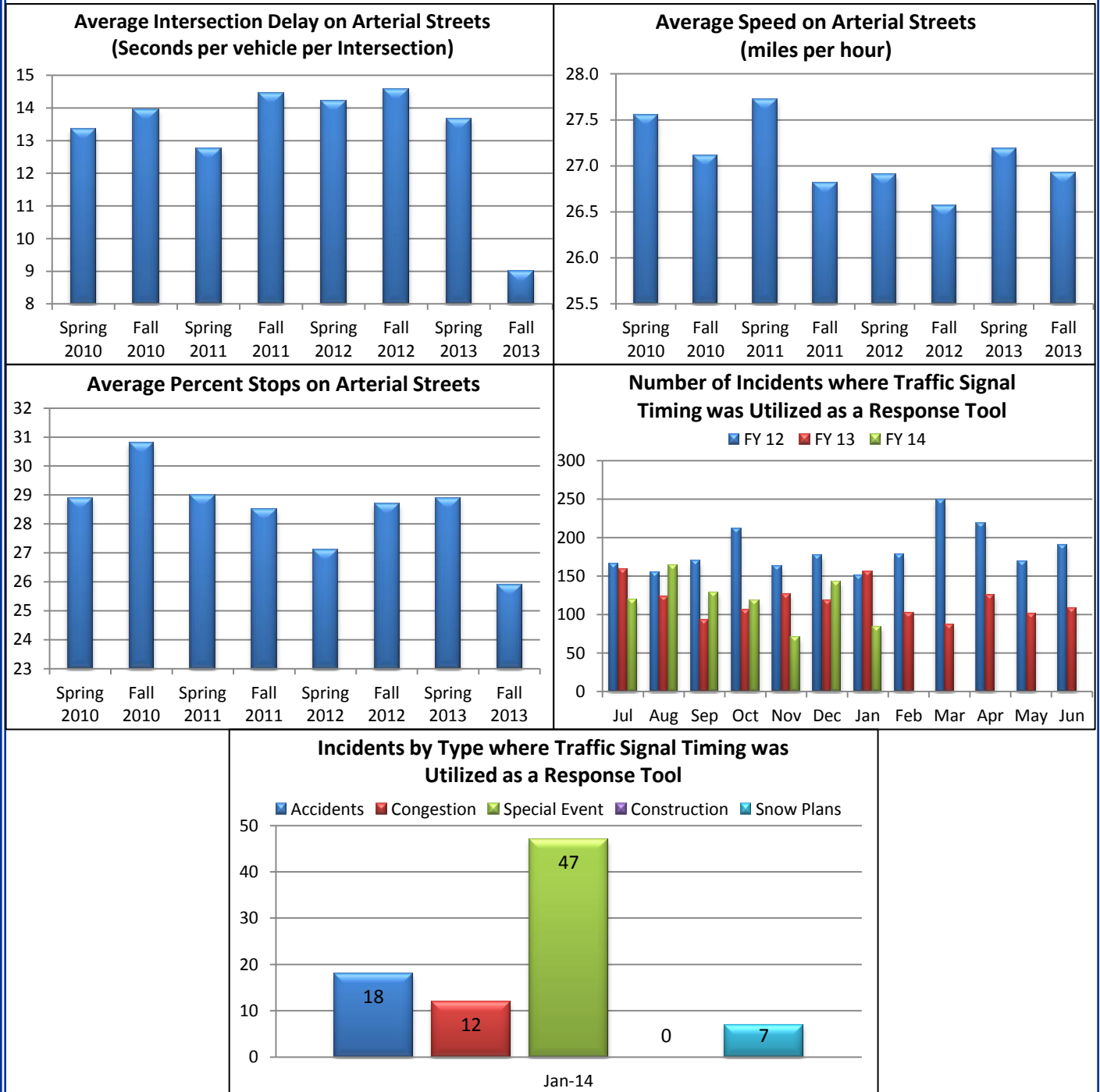
PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 14

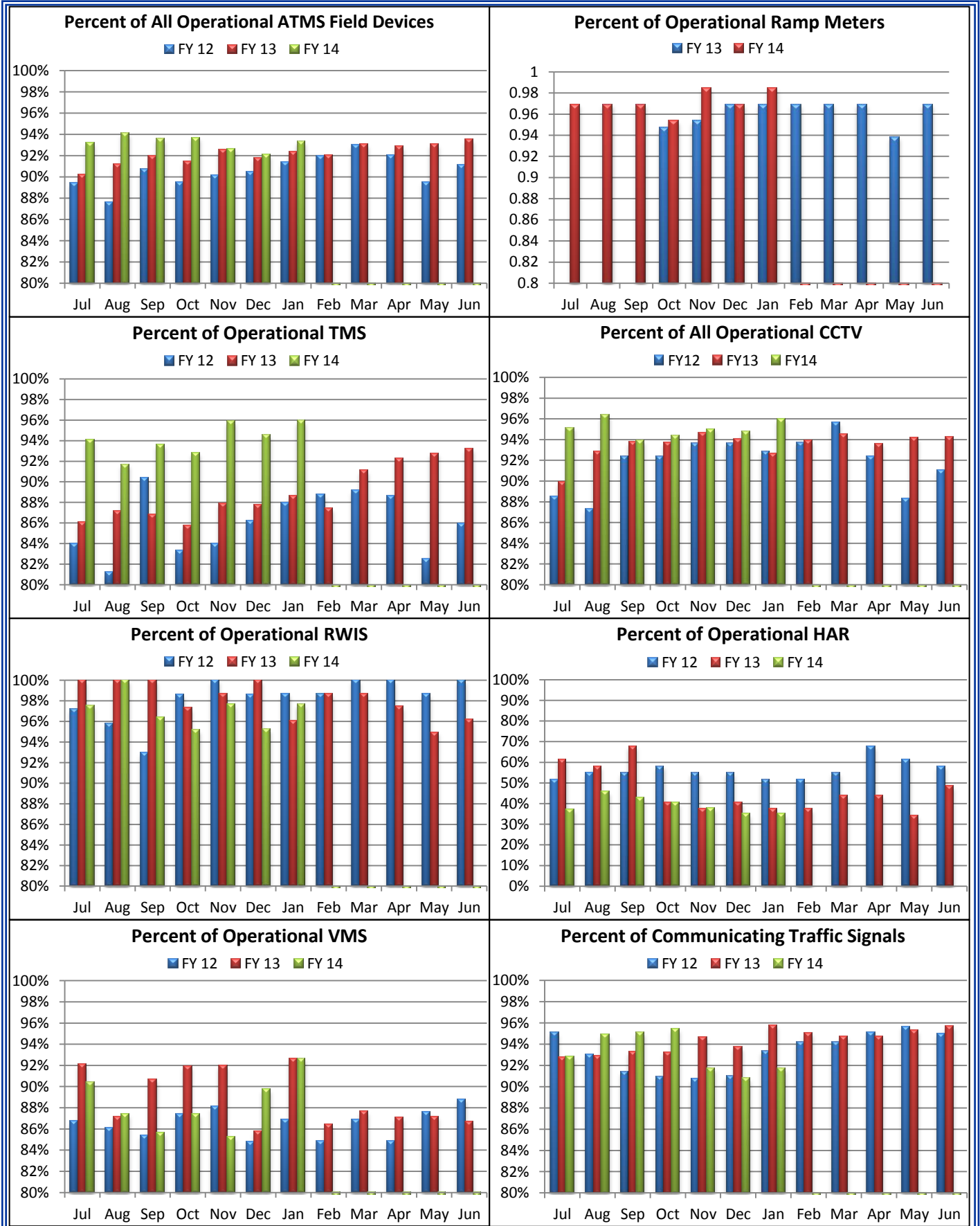


Surface Street Traffic Level of Service

The surface street traffic statistics are generated through a series of Travel Time measurements. These are conducted using a special equipped vehicle which measures the average travel time, the average percent of intersections at which a vehicle must stop, the average time stopped at an intersection, and the average speed. The Traffic Systems Section gathers these measurements from Regions 1, 2, 3, and 4 twice each year. The chart in the lower right hand corner shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.

The following charts illustrate data gathered during semi-annual timing runs.





Traveler Information

